

# REPORTER

February 1994

## Zig Zag and Xanadu

### A Chat with Ted Nelson

**T**he hard for me, coming to interactive multimedia from video and writing years later, to comprehend the frustration Ted Nelson feels with the world today. Smart and Right don't always win to be sure, but to me it's an exciting world, full of promise. I'm not sure he would disagree, but it's clear that he feels it's a flawed world we're creating where reality falls far short of the gospel he's been preaching for so many years. And it is a religious quest he's on, you can be sure of that.

Nelson is still optimistic he can make it work, his vision of democratic online information exchanges known as Xanadu, an egalitarian system where everyone can contribute and your account is automatically credited when others use your contributions. And after a sabbatical year on his houseboat in Sausalito he's back at the pulpit and looking for converts.

"I have this unshakable faith that I'm right," says Nelson, "and that the difference between right and wrong in this instance is so strong that halfway won't do."

Many people say they've been influenced by the writings of the man, who coined the term "hypertext" way back in 1960 BPC (Before Personal Computers). He is often credited as the father of the hypermedia concept upon which all interactive multimedia is based. But he has yet to cash in on his vision.

Autodesk bought into his dream for a time, hiring him to give speeches while developing its version of Xanadu, but new management gave up on the concept in 1992, and he now owns the name again, and is pursuing his quest on a number of fronts: Licensing the name and concept. Devel-

oping a server. Looking for developers who want to adopt his system.

Provocative and outspoken, he articulates well his criticisms of the existing order, less well perhaps the virtues of his own system. It's not a simple concept to grasp.

Excerpts from a recent interview:

**By Lee Callister**

### What is Xanadu?

Xanadu is a system for selling data online, meaning selling content and connections.

It's a very simple concept, but it's so different from everyone else's that it doesn't map. They say, how's it different from X? It's like saying, "How is a kitten different from an octopus?"

### How is it different?

Everything is linked sideways. Conventional computer systems as we know them are hierarchical, which makes no sense to me at all because you can't connect them to anything. You want to be able to reuse the material in other objects and have sideways links from other objects. So that's my paradigm for the way all filing should work. The fundamental issue is side linkage.

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Jeff Peterson

## A Multimedia Playground

If you want to go cruising on the information highway and check out some roadside attractions along the way take the kids and go to the Multimedia Playground at the Exploratorium this month. If you don't have any kids, borrow one. Or just go anyway. Billed as "a kind of public-access software trade show with the hardware to let you try things out," the exhibition includes five sections—Internet, Virtual Reality, "Multimedia Library," Multimedia Production, and Interactive Arts. It runs from February 12 through March 13.

### EXPLORING THE INTERNET

There'll be on-going demonstrations of Internet. You'll learn what is a World Wide Web, Mosaic and Gopher and access information world wide. Presentations also include real-time experiences of people experimenting with the Internet, such as CitySpace, an interactive program for kids, coordinated by Zane Vella. CitySpace uses the concept of neighborhood to introduce kids to the Internet, allowing them to create an electronic scrapbook, with words, images and voice.

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Everyone has access to the same material.

I originally conceived of it as an author's tool, so you would generate many versions side by side and they would transclude—that is, they would share material one to the other. So that way you'd be able to see them side by side—because one of the problems I have as a writer is, have I used this piece from my notes yet? I don't know. Did I use it in this version? I like that better in the old draft. How do I import it? This is an unthinkable tangle by manual means, and worse unthinkable in the computer world of hierarchical files.

When Xerox Parc finally popularized windows on the screen, they left this part out. There is no way you can draw lines between one window and another. So then Apple inherited that, and Microsoft Windows inherited that, so the dummies never got the idea. So that's the missing link.

Many people on the Internet tell me the time is now for my stuff, which is surprising, because for so many years no one could understand it.

*Is the idea, to build up a critical mass of people who would subscribe to the service?*

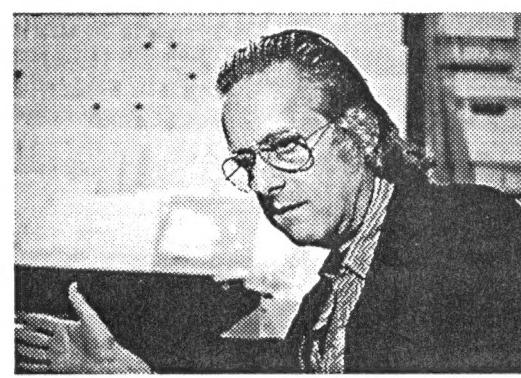
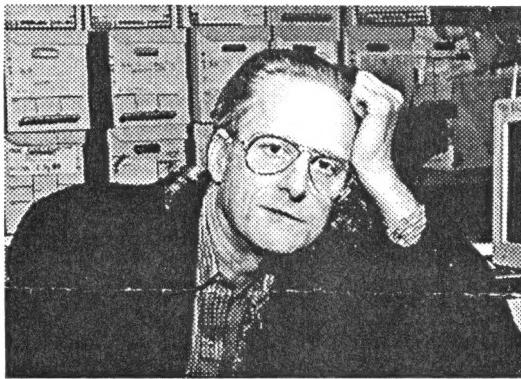
There are several roads. There is the service provider. It will be a distributed and licensed publishing venture with a federation of service providers. I'm in the business of licensing people to use the trademark basically.

Xanadu is a model of publishing and a model of business where the publisher pays for the stories and the user pays for the delivery, and the publisher gives everyone the right to make connections, by contract. And the user agrees not to reuse, not to redistribute except by transclusion, that is pointing at the material so that each new customer buys it from the original. Which is quite practical now on the Internet...so it's a different publication model. And my business model has always been McDonald's, in other words a franchise of independent operators essentially using the same business. So that's still the approach.

I've got people in several other countries now. I've licensed Xanadu Australia. He's got one development operation going. And we hope to be starting up another one in Japan. This is really simple stuff, using conventional databases. What's tough is the client software that runs in the user's computer, because that has to buy and

merge visually and in storage all the materials that have arrived. So that's the tricky part.

That's strictly a software thing, and by the way it's open because we invite vendors of every kind to create such kinds of programs. We're in the business of building a vending machine.



Photos by Jeff Peterson

Now as soon as we firm up the protocol, that'll be a little stronger. When that will happen I don't know. I hope before June. That's when the protocol essentially gets frozen for the early versions of Xanadu for both the servers, which we're putting together and for the client programs which we hope others will put together.

The client software is going to have to be quite interesting because it's going to have to be able to bring in files of all types. If you publish a file, a document on Xanadu it can be any format you

choose. You're the publisher. So the client has to be able to bring these things in and put them together. So you need capabilities like a Debabilizer, for example, for merging graphics that come from a variety of different formats. To see them together on the same screen and share their contents.

That's the user's front end. We're just selling rights. And in different formats.

### *What will it look like?*

What it looks like is a question of the front end structure. You can do one in a Windows style, you can do one in a Macintosh style, you can do one in a virtual reality style. That's not our problem.

### *The Issue is Functionality.*

The term I use is "virtuality." Unfortunately, I've used that term since 1987 or 86 and it's just been taken over by the virtual reality people Virtual Reality. I don't know who chose that, but to me that's 3D Goggle-roving, OK? and I'm not a member of that church. I have no objection to it. But to hype it up as a transcendental religious experience and a new way to live seems to me to be silly.

The main issue has to do with depth of data structure. Can you intercompare 3-dimensional worlds? Can you make sideways connections between three dimensional worlds of the kinds that I showed you? That to me is the important point.

The other alternative (offered) is artificial intelligence. We won't try to control it ourselves, it goes. We won't try to manipulate it ourselves. We'll let these AI beings come and do it for us. And it will be so much better than anything we could have possibly have done ourselves. And I'm very skeptical about that. I don't have good results in delegating things to other people. Why in the world should I think delegating to a bunch of robots would be any better?

These are religious issues. It's very important to recognize that. Because people are so emotional about issues of software. I had no idea. I wasn't tipped off by the fact that I was very emotional about issues of software. But everyone is.

The term paradigm I think is a generalization of the term religion. In a quasi-secular age

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### *Tel Nelson. Continued from Page 2*

nonetheless we have are deeply into our ways of thinking, and offended by other ways of thinking. And unable to understand other ways of thinking. How can this person possibly be so stupid? The answer is they're in a different paradigm. That's how you recognize a different paradigm. If the other person seems stupid and uncomprehending, and delirious in what they say. And in the computer field there are so many different paradigms. There's the Xerox PARC paradigm, there's the business paradigm. Well, we've got so much marketing clout behind this how can anything stand up against it kind of crap. And my virtuality paradigm, and my Xanadu paradigm...and there's the kind of kiddie paradigm. Oh you can do this. You can do that. And isn't it fun to learn all these things. And to me learning these things is just a pain in the ass because what they actually learn, so called computer literacy is crap you shouldn't have to learn. It's stuff that people have made up, that doesn't make any sense.

### *What effects are computers having on us as human beings?*

It's taking up more and more of our time, so we spend less and less of it with each other. The computer classes have become separated from the television classes. We're separated from each other. We meet by appointment. Because we're so busy keeping up with the latest rev.

I was out on the Bay the other day in my kayak, and I came up to a dry-dock. In this dry-dock was a pretty sailboat up on stilts, and two guys were sandblasting it, and I sorta paddled by slowly waiting to eavesdrop on what nautical remarks they would be making. And what I heard was

"Well, what I really want is a double speed 486 with la dah dah" and I thought "Jesus Christ, is there no getting away from it?"

So you've got to buy the latest stuff in order to run the latest stuff which they claimed would solve your problems, but makes new problems.

The only way to be productive is to freeze with what you have. Otherwise you're merely in the catch up phase.

### *What will Xanadu contribute to us as human beings?*

Well my religion is basically one of understanding and knowledge, and at the same time I

detested school all my life so on the one hand — popularizing understanding, and on the other hand smashing this hideous educational institution. And I had hopes that Xanadu is going to do both. Now I don't think about that. I'm just trying to get something done.

### *Realistically. How much of your work will be implemented.*

The word realistic means nothing to me. Because I was telling people in 1960 that there would be millions of personal computers, and that we'd read and write on personal computers, and people called me a lunatic. And so forth and so on for many predictions. And so people who say "let's be realistic", I don't know what it means, because my notion of reality is not theirs. And my sense of what can be and probably will be is very different.

### *How close was Autodesk to what you are talking about?*

As I said my notion is a sideways linkage of multiple versions with transclusions stretching into the distance. The development team had an extremely elegant and powerful unified system — one software system, that could be made into a network by itself. Just hook these machines up around the world. And they would point to each other and search... Basically they were re-addressing boxes for virtual media, so you'd say "Give me the 985th byte in this document," and it would scratch its head and say, "Ok, what he really wants is that piece which is quoted in this document".

Autodesk dropped it because they were focusing down as a CAD company, whatever that means. The people who had made the deal were long gone. Autodesk is a very political company. It's a wonder we survived that long.

The work that was done has been released to Xanadu Operating Company, or XOC as it's now called, which has licensed it to company called Memex Inc. in Palo Alto.

### *What else are you doing?*

Well I have my own generalized software system called Zig Zag, which is a design which I hope to license soon. I will have a specifications book out this year, and that will essentially be a generalized software package for all sorts of things that people want for their ordinary work. You don't present-

ly have a good system now for managing daily lists. As far as I'm concerned the calendars programs they put out now are inane. They're mimicking paper. That's a big mistake. I want to be able to make an entry in a list, see, I want to do this today, but it's part of that project, and that depends on it. If it gets postponed there are consequences in the others. If it gets done, it flips to the done pile, but at the same time it's relationship to the other lists is maintained. Now this is intricate. But it's not that complex. And I've worked out a visualization that will do all of this.

*Ted Nelson will be the speaker at the next NBMA meeting on February 17.*

### *New Age. Continued from Page 3*

slip by into years with a myriad of lines and colors giving clues to your destiny.

If gazing into the future is not in your stars, you can still put all your cards on the deck by playing Virtual Tarot, a CD-ROM by Virtual Media Works. This interactive experience is another interesting example of combining an age old art with high technology. Anyone who's a non believer, would still enjoy the original music, the rich 3D graphics, and animation.

"We wanted to do something positive, non-violent, and life affirming" says Catherine Manning, co-founder of the company. "We also felt Tarot lends itself to CD-ROM's because it's so visual. We wanted it to be entertaining and something that you could do for an extended time."

One can only ask their crystal ball what will be next as new age meets old age in the high-technology of multimedia.

*Ginnie Waters is a free-lance writer and producer. She co-produced the 1993 Mill Valley Interactive Showcase.*

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